Rec'd PCT/PTO 2 8 JUN 2005

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization International Bureau





(43) International Publication Date 22 July 2004 (22.07.2004)

PCT

(10) International Publication Number WO 2004/060447 A2

(51) International Patent Classification7:

A61M

(21) International Application Number:

PCT/US2003/041850

(22) International Filing Date:

31 December 2003 (31.12.2003)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

60/437,541

31 December 2002 (31.12.2002) US

- (71) Applicant (for all designated States except US): ULTRA-SONIC TECHNOLOGIES, L.L.C. [US/US]; 650 Industrial Park Road, St. Albans, VT 05478 (US).
- (72) Inventor; and
- (75) Inventor/Applicant (for US only): WEIMANN, Ludwig, J. [US/US]; 488 Ethan Allen Parkway, Burlington, VT 05401 (US).

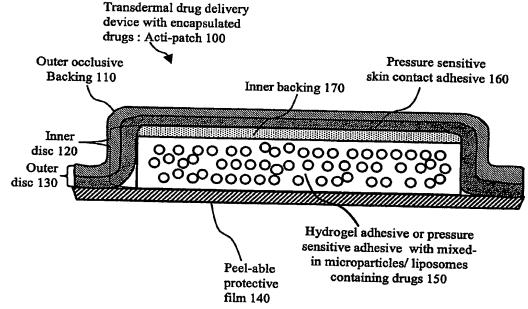
- (74) Agent: ELMAN, Gerry, J.; Elman Technology Law, P.C., 406 Yale Avenue, P.O. Box 209, Swarthmore, PA 19081-0209 (US).
- (81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (regional): ARIPO patent (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

 without international search report and to be republished upon receipt of that report

[Continued on next page]

(54) Title: TRANSDERMAL DELIVERY USING ENCAPSULATED AGENT ACTIVATED BY ULTRASOUND AND/OR HEAT



(57) Abstract: A method for delivery of substance through at least one dermal layer, by providing a substance in microcapsules at a predetermined size, within a medium (150) for holding the microcapsules; placing the medium for holding the microcapsules on a surface of a patch (100) adjacent the skin (320) of a human or animal; and applying energy (200) to the patch, the energy having a characteristic of disturbing the integrity of the microcapsules, thereby resulting in release of the substance from the microcapsules. The energy may be selectively applied to release the substance at desired times. The substance may be a drug or other active agent.

2004/060447 A2